

Hogan & Hartson 81864.0026 Gouichi NISHIZAWA et al. Method for Manufacturing A R-T-B... Serial No. 10/675,797 filed 09/29/03 17 Drawing Sheets; Sheet 1 of 17

ALLOY a1	LOW R ALLOY	23.6Nd-6Pr-0.3Dy-1.1B-0.05Cu-0.2Al-bal.Fe(wt. %)
ALLOY a2	LOW R ALLOY CON	TAINING Zr 23.6Nd-6Pr-0.3Dy-1.1B-0.05Cu-0.2AI-0.32Zr-bal.Fe(wt. %)
ALLOY a3		LOW R ALLOY CONTAINING Zr 15.7Nd-6Pr-8.1Dy-1.1B-0.05Cu-0.2AI-0.15Zr-bal.Fe(wt. %)
ALLOY a4		LOW R ALLOY CONTAINING Zr 23.9Nd-6Pr-1.1B-0.05Cu-0.2AI-0.15Zr-bal.Fe(wt. %)
ALLOY a5		LOW R ALLOY CONTAINING Zr (WITH HIGH AI) 23 .6Nd-6Pr-0.3Dy-1.1B-0.05Cu-0.42AI-0.12Zr-bal.Fe(wt. %)
ALLOY a6		ONTAINING Zr (WITHOUT AI) 23 .6Nd-6Pr-0.3Dy-1.1B-0.05Cu-0.12Zr-bal.Fe(wt. %)
ALLOY a7		LOW R ALLOY CONTAINING 2r 27.9Nd-0.1Dy-1.1B-0.03Cu-0.05AI-0.08Zr-bal.Fe(wt. %)
ALLOY a8	LOW R ALLOY CON	TAINING Zr 23.7Nd-6Pr-0.2Dy-1.6B-0.3Cu-0.25AI-0.3Zr-bal.Fe(wt. %)
ALLOY b1	HIGH R ALLOY (WITHOUT B)	40.6Nd-0.05Cu-5Co-0.2Al-bal.Fe(wt. %)
ALLOY 62		HIGH R ALLOY CONTAINING Zr (WITH B) 40.6Nd-0.5B-0.05Cu-5Co-0.2AI-3.1Zr-bal.Fe(wt. %)
ALLOY 53	HIGH R ALLOY (WITHOUT B AND AI)	I R ALLOY B AND AI) 40.6Nd-0.05Cu-5Co-bal.Fe(wt. %)
ALLOY 64	HIGH R ALLOY (WITHOUT B) 35.	HIGH R ALLOY (WITHOUT B) 35.1Nd-0.03Cu-2Co-0.05Al-bal.Fe(wt. %)
ALLOY 55	HIGH R ALLOY (WITHOUT B) 40.6	THOUT B) 40.6Nd-0.3Cu-20Co-0.25Al-bal.Fe(wt. %)

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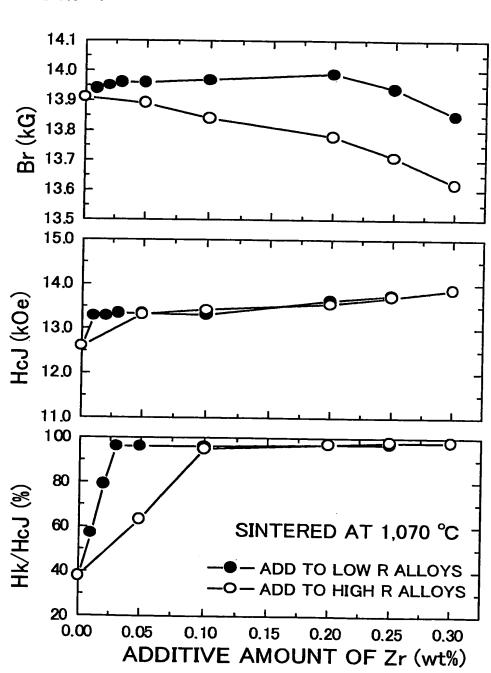
ES(wt. %) OXYGEN OXYGEN AMOUNT OXYGEN ALLOYS											
1500 1210 ALLOY al ALLOY bl 13.94 12.59 38 1500-0.01Zr 1290 ALLOY al ALLOY bl 13.96 13.28 57 1500-0.03Zr 1360 ALLOY al ALLOY bl 13.96 13.34 96 1500-0.05Zr 1190 ALLOY al ALLOY bl 13.96 13.31 96 1500-0.05Zr 1320 ALLOY al ALLOY bl 13.96 13.32 95 1500-0.05Zr 1320 ALLOY al ALLOY bl 13.96 13.76 97 1500-0.05Zr 1300 ALLOY al ALLOY bl 13.86 13.86 98 1500-0.05Zr 1310 ALLOY al ALLOY bl 13.89 13.26 97 1500-0.05Zr 1310 ALLOY al ALLOY bl 13.89 13.76 97 1500-0.05Zr 1310 ALLOY al ALLOY bl 13.99 11.44 54 1500-0.05Zr 1820 ALLOY al ALLOY bl 13.99 12.33 96 11.49 1500-0.05Zr 1800 ALLOY al ALLOY bl 13.99 12.39 96 11.49 1500-0.05Zr 1800 ALLOY al ALLOY bl 13.99 12.39 96 11.49 1500-0.05Zr 1800 ALLOY al ALLOY bl 13.99 12.39 96 11.49 1500-0.05Zr 1800 ALLOY al ALLOY bl 13.99 12.39 96 11.49 1500-0.05Zr 1800 ALLOY al ALLOY bl 13.95 12.55 97 11.30 1500-0.05Zr 1800 ALLOY al ALLOY bl 13.95 12.55 97 11.30 1500-0.05Zr 1800 ALLOY al ALLOY bl 13.95 12.55 97 11.30 1500-0.05Zr 1800 ALLOY al ALLOY bl 13.95 12.55 97 11.30 1500-0.05Zr 1800 ALLOY al ALLOY bl 13.95 12.55 97 11.30 1500-0.05Zr 1800 ALLOY al ALLOY bl ALLOY bl 13.95 12.35 97 11.30 1500-0.05Zr 1900 ALLOY al ALLOY bl ALLOY	COMPOSITIONS	OF SINTERED BODIES(wt. %)	AMOUNT OF OXYGEN (ppm)	LOW R ALLOYS	HIGH R ALLOYS	SINTERING TEMPERA- TURE	Br (kG)	HcJ (kOe)	Hk/HcJ (%)	B	CV
1500-0.012r 1290	Fe-24.9Nd-5.4Pr-0.4	Dy-1B-0.05Cu-0.2Al-0.5Co	1210	ALLOY a1	ALLOY b1		13.91	12.59	88	15.17	'
1500-0.03Zr 1160	Fe-24.9Nd-5.4Pr-0.4	IDy-1B-0.05Cu-0.2Al-0.5Co-0.01Zr	1290				13.94	13.28	57	15.27	88
1500-0.03Zr 1360 ALLOY al	Fe-24.9Nd-5.4Pr-0.4	IDy-1B-0.05Cu-0.2Al-0.5Co-0.02Zr	1160		-		13.95	13.29	79	15.28	70
13.00 ALLOY all ALLOY blank 13.96 13.33 96 13.00	Fe-24.9Nd-5.4Pr-0.	4Dy-1B-0.05Cu-0.2Al-0.5Co-0.03Zr	1360				13.96	13.34	96	15.29	99
5Co-0.10Zr 1190 ALLOY a2 ALLOY a2 ALLOY b2 13.97 13.31 96 .5Co-0.20Zr 1110 ALLOY a1 ALLOY b1 13.94 13.75 97 .5Co-0.25Zr 1350 ALLOY b1 ALLOY b1 ALLOY b2 13.89 13.85 98 .5Co-0.25Zr 1170 ALLOY a1 ALLOY b2 13.84 13.43 95 .5Co-0.25Zr 1180 ALLOY a1 ALLOY b2 13.89 13.71 98 .5Co-0.30Zr 1310 ALLOY a1 ALLOY b2 13.89 11.44 54 .5Co-0.25Zr 1820 ALLOY a1 ALLOY b1 13.99 11.44 54 .5Co-0.25Zr 1870 ALLOY a1 ALLOY b1 13.99 12.33 97 .5Co-0.25Zr 1870 ALLOY a1 ALLOY b1 13.99 12.81 98 .5Co-0.25Zr 1800 ALLOY a1 ALLOY b2 13.81 12.39 97 .5Co-0.20Zr 1800 ALLOY a2 ALLOY b2	Fe-24.9Nd-5.4Pr-0.	4Dy-1B-0.05Cu-0.2AI-0.5Co-0.05Zr	1090	ALLOY a1	7 70 17		13.96	13.33	96	15.29	72
.5Co-0.20Zr 1110	Fe-24.9Nd-5.4Pr-0	.4Dy-1B-0.05Cu-0.2AI-0.5Co-0.10Zr	1190	ALLOY a2	ALLUT DI	<u></u>	13.97	13.31	96	15.30	78
5Co-0.25Zr 1320 13.90 13.94 13.75 97 5Co-0.05Zr 1240 ALLOY a1 ALLOY b1 1070°C 13.89 13.85 98 5Co-0.05Zr 1400 ALLOY a1 ALLOY b1 13.84 13.43 95 5Co-0.25Zr 1170 ALLOY a1 ALLOY b2 13.71 13.71 98 5Co-0.25Zr 1220 ALLOY a1 ALLOY b1 13.89 11.44 54 5Co-0.25Zr 1820 ALLOY a1 ALLOY b1 13.89 11.44 54 5Co-0.10Zr 1820 ALLOY a1 ALLOY b1 13.99 12.33 97 5Co-0.25Zr 1870 ALLOY a2 ALLOY b1 13.99 12.33 97 5Co-0.25Zr 1870 ALLOY a2 ALLOY b1 13.93 12.81 98 5Co-0.25Zr 1800 ALLOY a2 ALLOY b2 13.81 12.39 96 5Co-0.20Zr 1960 ALLOY a2 ALLOY b2 13.81 12.39 97	Fe-24.9Nd-5.4Pr-0	.4Dy-1B-0.05Cu-0.2Al-0.5Co-0.20Zr	1110				13.99	13.64	97	15.35	101
5Co-0.30Zr 1240 ALLOY b1 13.85 13.85 98 .5Co-0.10Zr 1400 ALLOY b1 13.84 13.32 63 .5Co-0.10Zr 1400 ALLOY b2 13.84 13.43 95 .5Co-0.20Zr 1170 ALLOY b1 13.71 13.71 98 .5Co-0.30Zr 1310 ALLOY b1 13.89 11.44 54 .5Co-0.10Zr 1820 ALLOY b1 13.99 12.33 97 .5Co-0.20Zr 1870 ALLOY b2 13.99 12.39 96 .5Co-0.20Zr 1870 ALLOY b2 13.99 12.39 96 .5Co-0.20Zr 1800 ALLOY b2 13.99 12.39 96 .5Co-0.20Zr 1800 ALLOY b2 13.81 12.39 96	Fe-24.9Nd-5.4Pr-0	J.4Dy-1B-0.05Cu-0.2Al-0.5Co-0.25Zr	1320				13.94	13.75	97	15.32	66
5Co-0.05Zr 1350 ALLOY b1 + 1070°C 13.89 13.32 63 5Co-0.10Zr 1400 ALLOY a1 + 13.84 13.43 95 5Co-0.20Zr 1170 ALLOY a1 ALLOY b2 13.71 13.71 13.71 98 5Co-0.30Zr 1388 ALLOY a1 ALLOY b1 13.62 13.88 98 5Co-0.10Zr 1820 ALLOY a1 ALLOY b1 13.99 12.33 97 5Co-0.20Zr 1870 ALLOY a2 ALLOY b1 13.98 12.58 97 5Co-0.25Zr 1800 ALLOY a2 ALLOY b1 13.93 12.33 97 5Co-0.25Zr 1800 ALLOY a2 ALLOY b2 13.93 12.39 96 5Co-0.20Zr 1960 ALLOY a2 ALLOY b2 13.75 12.55 97	Fe-24.9Nd-5.4Pr-(3.4Dy-1B-0.05Cu-0.2Al-0.5Co-0.30Zr	1240	 			13.85	13.85	86	15.24	110
5Co-0.10Zr 1400 ALLOY all through and through and through and through at through and through at through at through at through at throw all through at through at through at through at through at throw at through at through at through at through at through at throw at through at through at through at through at through at throw at through at through at through at through at through at throw at through at through at through at through at through at throw at through at through at through at through at through at throw at through at through at through at through at through at throw at through at through at through at through at through at throw at through at through at through at through at through at throw at through at through at through at through at through at throw at through at through at through at through at through at throw at through at through at through at through at through at throw at through at through at through at through at through at throw at through at through at through at through at through at throw at through at through at through at through at through at throw at through at through at through at through at through at throw at through at through at through at through at through at throw at through at through at through at through at through at throw at through at through at through at through at through at throw at thro	Fe-24.8Nd-5.5Pr-	0.3Dy-1B-0.05Cu-0.2Al-0.5Co-0.05Zr	1350			9	13.89	13.32	63	15.22	159
5Co-0.20Zr 1170 ALLOY a1 + Loy a1 + Loy b2 13.78 13.56 97 5Co-0.25Zr 1220 ALLOY a1 ALLOY b1 13.89 13.89 98 5Co-0.30Zr 1888 ALLOY a1 ALLOY b1 13.89 11.44 54 5Co-0.10Zr 1820 ALLOY a1 13.97 12.33 97 1 5Co-0.25Zr 1870 ALLOY a2 ALLOY b1 13.93 12.81 98 1 5Co-0.10Zr 1800 ALLOY a2 ALLOY b2 13.81 12.39 96 1 5Co-0.20Zr 1960 ALLOY a2 ALLOY b2 13.81 12.39 96 1	Fe-24.8Nd-5.5Pr-(0.3Dy-1B-0.05Cu-0.2Al-0.5Co-0.10Zr	1400		ALLOV 64	10707	13.84	13.43	95	15.18	214
5Co-0.25Zr 1220 ALLOY b2 13.62 13.71 98 5Co-0.30Zr 1310 13.62 13.88 98 5Co-0.30Zr 1888 ALLOY a1 ALLOY b1 13.89 11.44 54 5Co-0.10Zr 1820 ALLOY a1 ALLOY b1 13.99 12.33 97 5Co-0.20Zr 1870 ALLOY b1 13.98 12.81 98 1 5Co-0.10Zr 1800 ALLOY b1 13.93 12.39 96 1 5Co-0.20Zr 1960 ALLOY b2 1 13.75 12.55 97 1	Fe-24.8Nd-5.5Pr-().3Dy-18-0.05Cu-0.2Al-0.5Co-0.20Zr	1170	ALLOY a1	+		13.78	13.56	97	15.14	257
5Co-0.30Zr 1310 ALLOY a1 ALLOY b1 13.62 13.88 98 5Co-0.10Zr 1888 ALLOY a1 13.89 11.44 54 5Co-0.10Zr 1820 ALLOY a1 13.97 12.33 97 5Co-0.25Zr 1870 ALLOY b1 13.98 12.58 97 5Co-0.10Zr 1800 ALLOY b1 13.93 12.31 96 5Co-0.20Zr 1960 ALLOY b2 13.75 12.55 97	Fe-24.8Nd-5.5Pr-C).3Dy-1B-0.05Cu-0.2Al-0.5Co-0.25Zr	1220		ALLOY 52		13.71	13.71	86	15.08	281
5Co 1888 ALLOY a1 ALLOY b1 13.89 11.44 54 5Co-0.10Zr 1820 ALLOY a1 ALLOY b1 13.97 12.33 97 5Co-0.20Zr 1920 ALLOY a2 ALLOY b1 13.98 12.58 97 5Co-0.10Zr 1800 ALLOY b1 + 13.93 12.81 98 5Co-0.20Zr 1960 ALLOY b2 + 13.75 12.55 97	e-24.8Nd-5.5Pr-	0.3Dy-1B-0.05Cu-0.2Al-0.5Co-0.30Zr	1310				13.62	13.88	86	15.01	275
1820 ALLOY a1 13.97 12.33 97 1920 ALLOY a2 ALLOY b1 13.98 12.58 97 1870 ALLOY b1 13.93 12.81 98 1800 ALLOY a1 4 13.81 12.39 96 1960 ALLOY a1 4 13.75 12.55 97	e-24.9Nd-5.4Pr	15 Fe-24.9Nd-5.4Pr-0.4Dy-1B-0.05Cu-0.2AI-0.5Co	1888	ALLOY a1	ALLOY b1	<u></u>	13.89	1.44	54	15.03	,
5Co-0.20Zr 1920 ALLOY a2 ALLOY b1 13.98 12.58 97 5Co-0.25Zr 1870 ALLOY b1 13.93 12.81 98 5Co-0.10Zr 1800 ALLOY a1 + + 13.81 12.39 96 5Co-0.20Zr 1960 ALLOY b2 ALLOY b2 13.75 12.55 97	-e-24.9Nd-5.4Pr-	0.4Dy-1B-0.05Cu-0.2AI-0.5Co-0.10Zr	1820	ALLOY a1		.	13.97	12.33	97	15.20	₩
5Co-0.25Zr 1870 ALLOY b1 ALLOY b1 13.93 12.81 98 5Co-0.20Zr 1960 ALLOY a1 + TOY b2 + ALLOY b2 13.75 12.39 96	-e-24.9Nd-5.4Pr-	0.4Dy-1B-0.05Cu-0.2Al-0.5Co-0.20Zr	1920	+ ALLOY a2	ALLOY 51		13.98	12.58	97	15.24	88
5Co-0.10Zr 1800 ALLOY a1 + 13.75 12.55 97	e-24.9Nd-5.4Pr-	0.4Dy-1B-0.05Cu-0.2Al-0.5Co-0.25Zr	1870			- 11	13.93	12.81	86	15.21	97
5Co-0.20Zr 1960 ALLOY b2 13.75 12.55 97	24.8Nd5.5Pr-	0.3Dy-1B-0.05Cu-0.2AI-0.5Co-0.10Zr	1800	100	ALLOY b1	L	13.81	12.39	96	15.05	223
	24.8Nd-5.5Pr-	3.3Dy-1B-0.05Cu-0.2AI-0.5Co-0.20Zr	1960	אררטן פון	ALLOY 62		13.75	12.55	97	15.01	263

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Br+0.1 ×		15.26	15.26	15.27	15.26	15.26	15.97	15.97	12.01	0 0	51.6	4.94 10.01	13.27	60.0	5.39	15.20	14.91
Hk/HcJ (%)	8	98	16	94	94	92	95	, c	3 8	9 6	à 6	8 4	S 8) ii	C (96
HcJ (kOe)	1965	13.24	13.23	13.19	13.19	13.23	13.28	13.55	12.06	10.76	12.50	11.20	12.49	2 6	7 7 60	13.27	13.00
B (kG)	19.65	13.94	13.94	13.95	13.94	13.94	13.94	13.91	13 88	12.85	12.68	14 15	14 14		2 6	2.0/	13.61
SINTERING TEMPERA- TURE				•	-				1050°C				***				
HIGH R ALLOYS	ALLOV 5-1	10101			ALLOY b1					ALLOY b1 +	ALLOY b2			ALLOY b1	ALLOY 53		-
LOW R ALLOYS	ALLOY a1		-	ALL OV 21	+	ALLOY a2		-		ALLOY a1			2	ALLUY a5 ALLOY b1 +	ALLOY a6		
AMOUNT OF OXYGEN	1210	1260	1180	000	000	110	1170	1200	1300	1370	1250	1220) i	1230
COMPOSITIONS OF SINTERED BODIES(wt. %)	21 Fe-24.9Nd-5.4Pr-0.4Dy-1B-0.05Cu-0.2AI-0.5Co	22 Fe-24.9Nd-5.4Pr-0.4Dv-1B-0.05Ci i-0.2AI-0.5Co-0.017z	23 Fe-24.9Nd-5.4Pr-0.4Dv-1R-0.05Ci = 0.24.9Nd-5.4Pr-0.4Dv-1R-0.05Ci = 0.24.9Nd-5.4Pr-0.4Pr	24 Fe-24 9Nd-5 4Pr-0 4Dv-18-0 050: -0 201-0 502-0 0022:	17000-0000 IV30 B0000 B1 6010 W B FN070	23 Fe-24.9Nd-5.4Pr-0.4Dy-1B-0.05Cu-0.2Al-0.5Co-0.05Zr	26 Fe-24.9Nd-5.4Pr-0.4Dy-1B-0.05Cu-0.2Al-0.5Co-0.10Zr	27 Fe-24.9Nd-5.4Pr-0.4Dy-1B-0.05Cu-0.2AI-0.5Co-0.20Zr	28 Fe-25.0Nd-5.4Pr-0.3Dy-1B-0.05Cu-0.2Al-0.5Co-0.05Zr	29 Fe-24.8Nd-5.5Pr-0.3Dy-1B-0.05Cu-0.2Al-0.5Co-0.10Zr	30 Fe-24.8Nd-5.5Pr-0.3Dy-1B-0.05Cu-0.2AI-0.5Co-0.20Zr	31 Fe-24.9Nd-5.4Pr-0.4Dy-1B-0.05Cu-0.01Al-0.5Co-0.10Zr	32 Fe-24.9Nd-5.4Pr-0.4Dy-1B-0.05Cu-0.03Al-0.5Co-0.10Zr	33 Fe-24.9Nd-5.4Pr-0.4Dy-1B-0.05Cu-0.05Al-0.5Co-0.10Zr	34 Fe-24.9Nd-5.4Pr-0.4Dy-1B-0.05Cu-0.3AI-0.5Co-0.10Zr	201 ON 14 E 40 0 40 0 40 0 00 0 111 0 0 0 0 0 0 0 0	33 F 8-24.3NQ-3.4PT-0.4DY-1B-0.03CU-0.4AI-0.5Co-0.10Zr
Š	21	22	23	24	30	67	76	27	28	29 F	30 F	31 F	32 F	33 F	34 F	25.	3

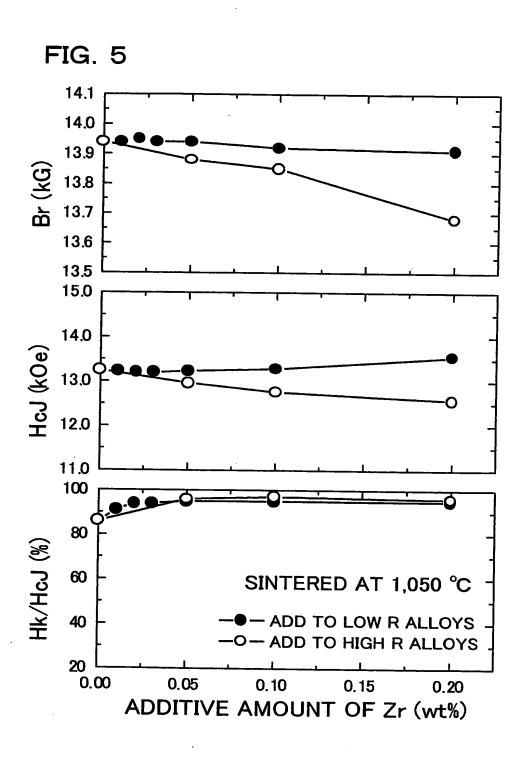
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FIG. 4



Hogan & Hartson 81864.0026 Gouichi NISHIZAWA et al. Method for Manufacturing A R-T-B... Serial No. 10/675,797 filed 09/29/03 17 Drawing Sheets; Sheet 5 of 17

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FIG. 6

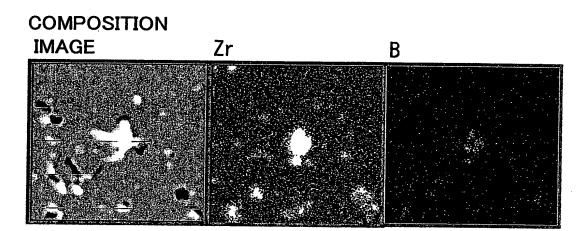
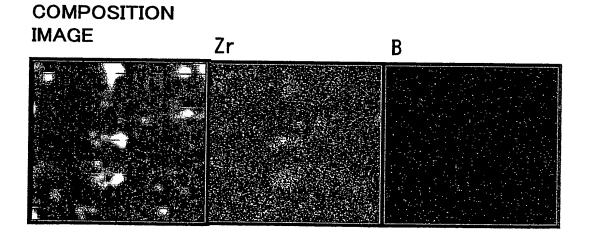
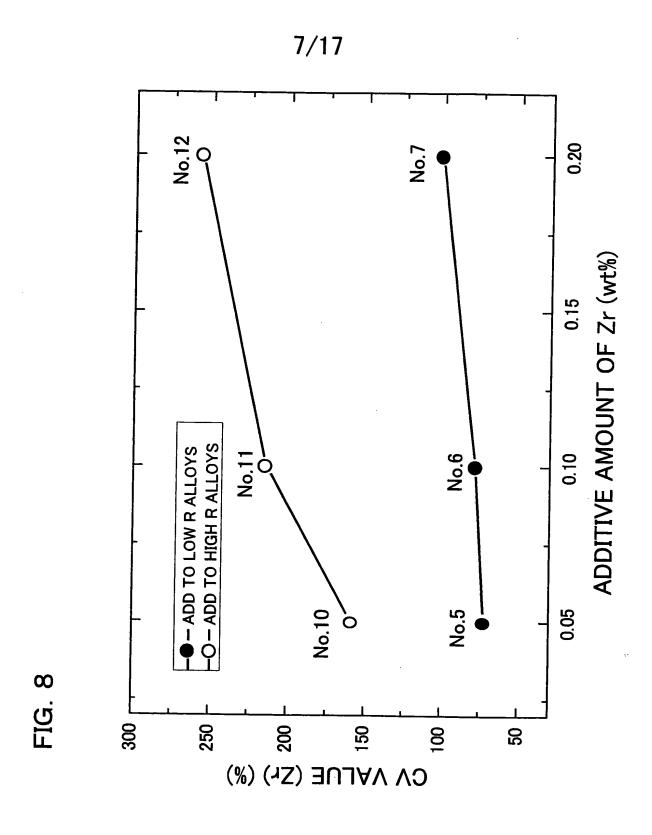


FIG. 7



Hogan & Hartson 81864.0026 Gouichi NISHIZAWA et al. Method for Manufacturing A R-T-B... Serial No. 10/675,797 filed 09/29/03 17 Drawing Sheets; Sheet 7 of 17



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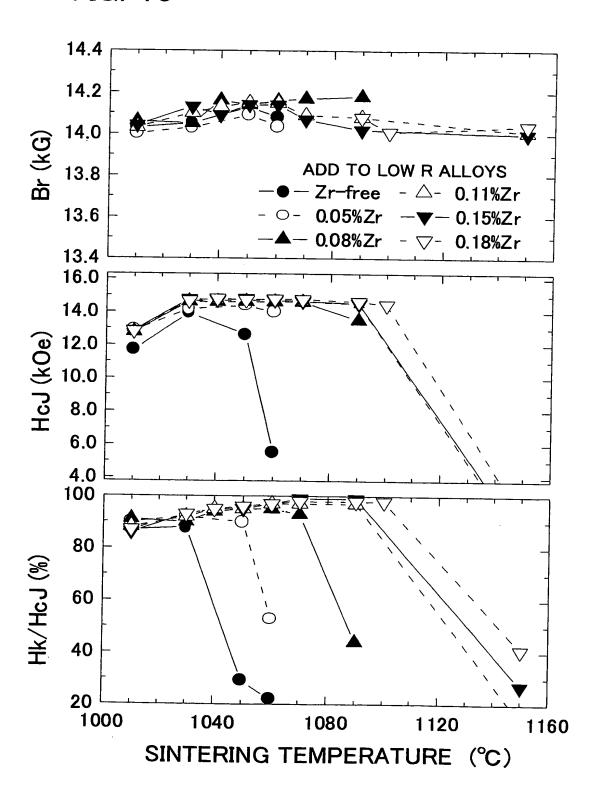
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		AMOUNT	r					
No.	COMPOSITIONS OF SINTERED BODIES (wt. %)	OF OXYGEN (ppm)	SINTERING TEMPERA- TURE	Br (kG)	HcJ (kOe)	Hk/HcJ (%)	Br+0,1 × HcJ	CV VALUE
36			1010℃	14.03	11.68	87	15.20	
37	Fe-24.9Nd-5.4Pr-0.4Dy-1B-0.05Cu-0.2Al-0.5Co	680	1030℃	14.05	13.92	88	15.44	
38]	1050℃	14.13	12.64	29	15.39	
40			1060℃	14.08	5.53	22	14.63	
41		[1010℃	14.00	12.84	90	15.29	
42	Fe-24.9Nd-5.4Pr-0.4Dy-1B-0.05Cu-0.2AI-0.5Co-0.05Zr	670	1030℃	14.03	14,17	92	15.44	
43			1050℃	14.09	14.37	90	15.53	-
44			1060℃	14.04	14.00	53	15.44	-
45			1010℃	14.06	12.76	91	15.33	_
46			1030℃	14.05	14.61	90	15.51	-
47	Fe-24.9Nd-5.4Pr-0.4Dy-1B-0.05Cu-0.2Al-0.5Co-0.08Zr		1040℃	14.16	14.59	94	15.62	_
48	16 24.5140-5.4F1-0.4Dy-16-0.05C0-0.2AI-0.5C6-0.08Zr	870	1050℃	14.14	14.61	95	15.60	
49		ĺ	1060℃	14.16	14.60	95	15.62	
50			1070℃	14.17	14.60	93	15.63	
51			1090℃	14.18	13,51	44	15.53	_
52	·		1010℃	14.03	12.85	88	15.31	65
53	· ·	!	1030℃	14.10	14.67	92	15.57	71
54		ļ	1040℃	14.13	14.66	95	15.59	77
55	Fe-24.9Nd-5.4Pr-0.4Dy-1B-0.05Cu-0.2Al-0.5Co-0.11Zr	700	1050℃	14.15	14.71	95	15.62	75
56	·	}	1060℃	14.15	14.69	97	15.62	72
57			1070℃	14.09	14.61	97	15.55	75
58			1090℃	14.08	14.49	97	15.53	81
59			1150℃	14.01	0.11	14	14.02	142
60			1010℃	14.04	12.85	86	15.32	-68
61	•	Ī	1030℃	14.13	14.72	93	15.60	75
62		ł	1040℃	14.09	14.77	95	15.57	72
63	Fe-24.9Nd-5.4Pr-0.4Dy-1B-0.05Cu-0.2Al-0.5Co-0.15Zr	740	1050℃	14.14	14.79	95	15.62	80
64		ĺ	1060℃	14.14	14.72	97	15.61	85
65		Ì	1070℃	14.07	14.66	99	15.53	88
66			1090℃	14.02	14.51	99	15.47	91
67			1150℃	14.00	0.50	27	14.05	150
68		1	1010℃	13.98	12.81	87	15.26	
69			1030°C	14.07	14.67	93	15.54	
70	1	İ	1040℃	14.13	14.80	95	15.61	
71	Fe-24.9Nd-5.4Pr-0.4Dy-1B-0.05Cu-0.2Ai-0.5Co-0.18Zr		1050℃	14.05	14.72	96	15.52	
72	1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	810	1060℃	14.18	14.78	97	15.65	
73		Ì	1070℃	14.03	14.76	98	15.51	
74			1090℃	14.08	14.63	98	15.54	-
75	j	ſ	1100℃	14.01	14.45	98	15.46	
		L	1150°C	14.04	1.75	41	14.22	

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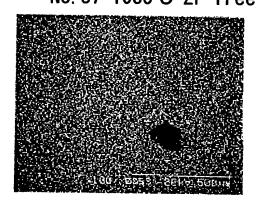
FIG. 10



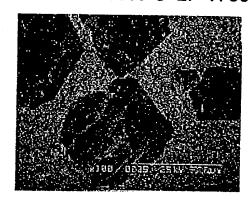
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FIG. 11

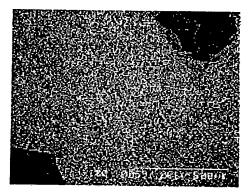
No. 37 1030°C Zr-free



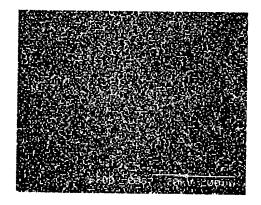
No. 39 1060°C Zr-free



No. 43 1060°C 0. 05%Zr



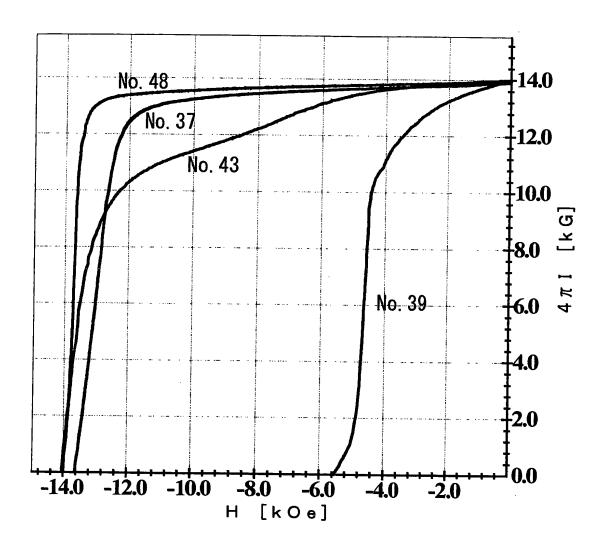
No. 48 1060°C 0. 08Zr



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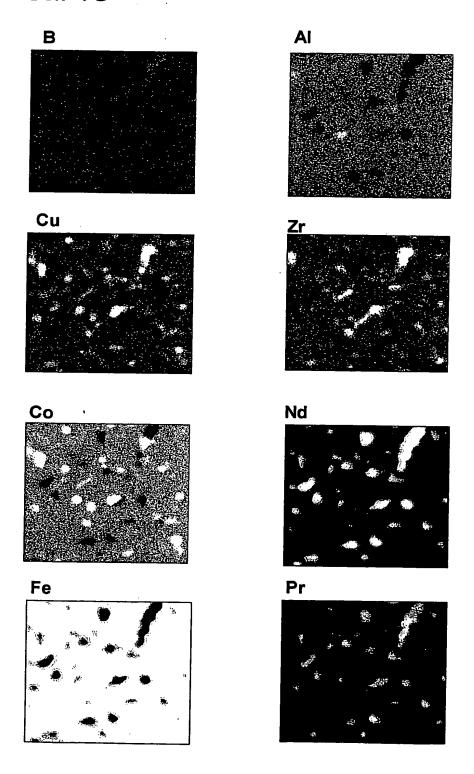
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FIG. 12



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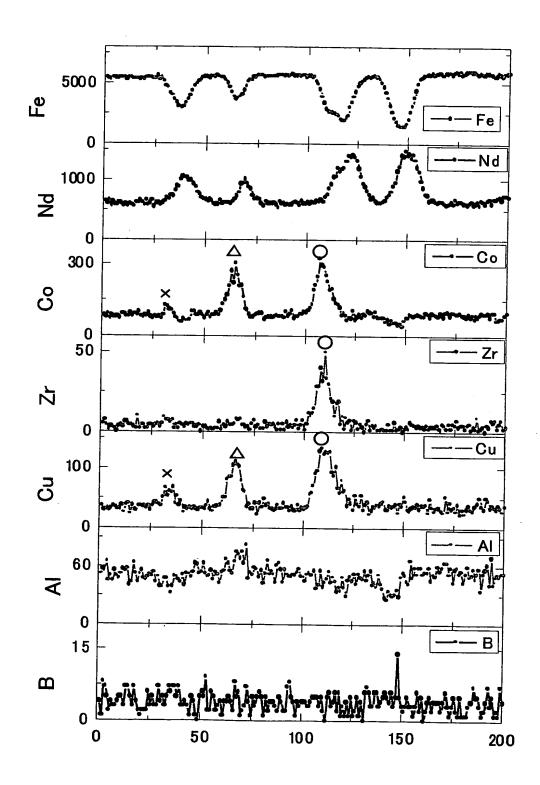
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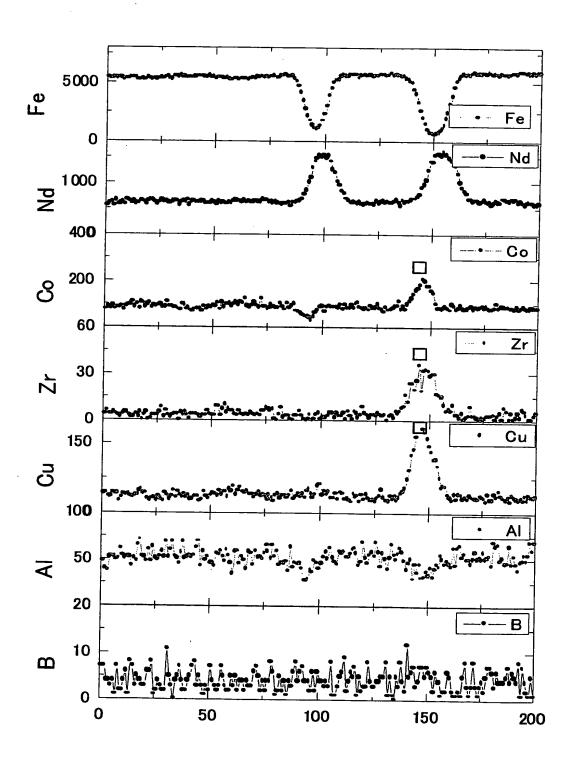
FIG. 14



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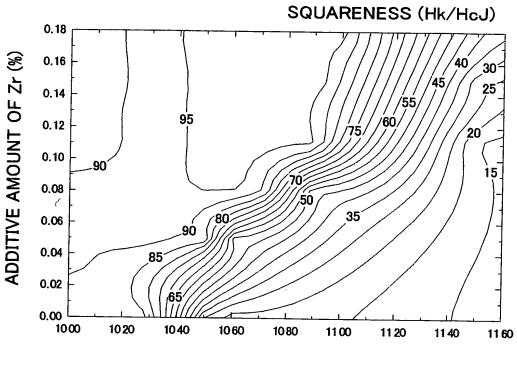
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FIG. 15



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FIG. 16



SINTERING TEMPERATURE (°C)

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No.	COMPOSITIONS OF SINTERED BODIES(wt. %)	LOW R ALLOYS	HIGH R ALLOYS	SINTERING TEMPERA-	P. G. S.	HcJ (kOe)	Br HcJ Hk/HcJ (kG) (kOe)	HcJ HK/HcJ Br+0.1 x (KOe) (%) HcJ
76	76 Fe-25.0Nd-5.3Pr-1B-0.05Cu-0.2Al-0.5Co-0.13Zr	ALLOY a4		1	14.42	12.62	98	15.68
77	77 Fe-23.2Nd-5.4Pr-2.1Dy-1B-0.05Cu-0.2Al-0.5Co-0.13Zr	ALLOY a1		6	13.68		17.3 97	15.41
28	78 Fe-20.6Nd-5.4Pr-4.7Dy-1B-0.05Cu-0.2AI-0.5Co-0.13Zr	ALLOY a2	ALLOY B1	20/01	13.19	13.19 23.23	86	15.51
79	79 Fe-19.0Nd-5.3Pr-7.2Dy-1B-0.05Cu-0.2AI-0.5Co-0.13Zr	ALLOY a3		1090°C 12.37 30.51	12.37	30.51	94	15.42

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S _o	COMPOSITIONS OF SINTERED BODIES(wt. %)	AMOUNT OF OXYGEN (ppm)	LOW R ALLOYS	LOW R HIGH R ALLOYS ALLOYS	SINTERING TEMPERA- TURE	Br (kG)	HcJ (kOe)	Нк/НсJ (%)	Br HcJ Hk/HcJ Br+0.1 x CV (kG) (kOe) (%) HcJ VALUE	CV VALUE
8	0 000 000 00 00 00 00 00 00 00 00 00									
8	ou re-20.3140-0.1 Dy-1B-0.03Cu-0.05Al-0.2Co-0.07Zr	720	ALLOY a7	ALLOY b4	ALLOY a7 ALLOY b4 1070°C 1462 131	14.62	131		15.00	1
7						7.02	2		13.80	
õ	81 re-26.9Nd-4.8Pr-0.2Dy-1.3B-0.3Cu-0.25Al-4Co-0.24Zr	086	ALLOY a8	ALLOY 55	ALLOY a8 ALLOY b5 1020°C 1388 153	13.88	15.3		15.41	
						;	2			200